

JUN 21 2007

Docket No. F-8140

Ser. No. 10/789,072

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) A method of forming an un-vulcanized rubber strip comprising the steps of:

obtaining an extruder, the extruder including a casing, a screw shaft disposed within the casing, a head region connected to a downstream end portion of the casing and a die connected to a downstream end portion of the head region;

a temperature of each of the casing, the screw shaft and the head region being independently controllable;

the die having a plurality of axially collinear and axially connected cavities extending therethrough, including first, second and third cavities, where the first cavity communicates with the downstream end portion of the head region, the second cavity is downstream of the first cavity and the third cavity is downstream of the second cavity;

the third cavity having an opening profile in which thickness of the opening profile is progressively reduced from approximately the centerline of the cavity to opposing edges of the opening profile;

continuously extruding the rubber through said extruder to form a rubber strip; ~~ribbon~~

Docket No. F-8140

Ser. No. 10/789,072

the step of continuously extruding the rubber further comprising:
controlling the temperature of each of the casing, the screw shaft and the head region so that:

the temperature of the casing is higher than that in the screw shaft; and
the temperature of the head region is higher than that in the casing; and
wherein the rubber strip extruded from the die has a profile shape conforming to the opening profile of the third cavity.

2. (Currently Amended) The method of Claim 1, wherein the temperature of the die is ~~controlled to be in the die is~~ equal to or higher than the temperature of that in the head region.

3. (Previously Presented) The method of Claim 1 or 2, wherein a width of the extruded rubber strip is in a range of 5 to 50 mm while the thickness of the rubber strip is in a range of 0.5 to 3.0mm at around the centerline, and in a range of 0.05 to 0.2mm at along the edges.

4. (Withdrawn) An apparatus for forming an un-vulcanized rubber strip as extruded from a die of an extruder, which is to be spirally wound to form a rubber part for tire manufacturing,

Docket No. F-8140

Ser. No. 10/789,072

temperatures at a main-part casing, a screw shaft and a head region included with the die being set as controlled as to be different from each other in a manner that: the temperature as controlled in the main-part casing is higher than that in the screw shaft; and the temperature as controlled in the head region is higher than that in the main-part casing.

5. (Withdrawn) An apparatus for forming the rubber strip according to Claim 4, wherein the temperature as controlled in the die is equal to or higher than that in the head.

6. (Withdrawn) An apparatus for forming the rubber strip according to Claim 4 or 5, wherein said die is comprised of: a shoulder for narrowing-down a passage or throttling; a discharge port continuous with a distal portion of a cavity of the die through the shoulder; and an intermediate narrowing-down portion that is formed as stepped between distal and rear parts of the cavity and as disposed at substantially middle in the cavity with respect to a passage in flow-out direction from a rear opening communicated with the head till the discharge port, so that a throttling or narrowing-down of a passage for a rubber material is made at the intermediate narrowing-down portion as well as at said shoulder.

Docket No. F-8140

Ser. No. 10/789,072

7. (Withdrawn) A method for manufacturing a tire strip according to Claim 6, wherein, in a view from rearward, said distal part of the cavity appears to be a long hole arranged in conformity with longitudinal direction of the discharge port; and said distal part is continuous with said shoulder for narrowing down at distal side.

8. (Previously Presented) A method for manufacturing a tire comprised of a plurality of rubber parts,;

the method comprising:

obtaining a rotary support body for building the tire;

forming at least one of said rubber parts as a rubber strip according to the method of claim 1; and

feeding the rubber strip to the rotary support body; and

winding the rubber strip in a tire circumferential direction around the support body so that the rubber strip partially overlaps an adjacent rubber part wound onto the support body.

9. (Previously Presented) The method of Claim 8, wherein the rubber strip is wound around the support body so that a positional misalignment in a tire circumferential direction is formed in a range of 0 to 5mm between start and end edges of the rubber strip.

Docket No. F-8140

Ser. No. 10/789,072

10. (Previously Presented) The method of Claim 8 or 9, wherein extent of being overlapped is in a range of $1/2$ to $1/5$ of a width of said rubber strip, in a widthwise direction of the tire.

11. (Previously Presented) The method of Claim 8 or 9, wherein at least two of the plurality of rubber parts are formed by spirally winding around the support body along a circumferential direction of the tire, and

wherein starting rotation-wise positions of the respective rubber parts are spaced from each other by 10 degrees or more in the circumferential direction of the tire.